Abstract

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Method for automated measurement of the ohmic rotor re-
sistance (R_r) of an asynchronous machine (1) controlled
via an inverter (8) while being acted upon by a non-
rotating field, the method involving

10   a. measuring the ohmic stator resistance (R_s), the
            leakage inductances $(L_{\sigma s}, L_{\sigma r})$ and the main in-
            ductance (L_m) of the asynchronous machine,

        b. leading a testing signal (U_{sa}) being formed by a
            predetermined direct signal with a superimposed
15   alternating signal to a phase winding (a) of
            the asynchronous machine, the frequency of the
            alternating signal corresponding approximately
            to the nominal slip frequency (f_s) of the asyn-
            chronous machine (1),

20   c. measuring the amplitude and the phase (φ) of
            the phase signal $(\overline{I}_{sa})$ resulting from the test-
            ing signal, and

        d. calculating the ohmic rotor resistance (R_r) from
            the measured values according to a) and c).

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Measuring the ohmic rotor resistance in accordance with
this method can be performed in a very short time, when
the inductances and the ohmic stator resistance are known.
Further, current displacement does not appear due to the
30 low frequency of the alternating signal.

Fig. 1